

### REMARKS

Claims 1, 3 and 4 are now present in this application. Claim 1 is independent.

Claim 1 has been amended to clarify that the organometal complex includes at least iridium as the metal. No new matter has been added.

Reconsideration of this application, as amended, is respectfully requested.

#### *Issues Under 35 U.S.C. § 112, First Paragraph*

Claim 4 is rejected under 35 U.S.C. 112, first paragraph, for failing to comply with the written description requirement. Applicants respectfully traverse the rejection.

Specifically, the Examiner objects to claim 4 for adding *new matter* to the disclosure. The Examiner alleges that the present disclosure does not have sufficient written description support for the recitation that the luminescent layer emits light via phosphorescence. In response, the Examiner's attention is directed to paragraph [0072], which is as follows:

The following has been found. When TAZ, or Compound 12 or 33 is used as a main material for a luminescent layer, energy transition to Ir(ppy)<sub>3</sub> occurs, whereby *phosphorescence* occurs. When Alq<sub>3</sub> is used, no energy transition to Ir(ppy)<sub>3</sub> occurs, and Alq<sub>3</sub> itself causes fluorescence. (Emphasis added).

This section clearly describes that the phosphorescence occurs in the luminescent layer. As such, present claim 4 does not contain new matter. Reconsideration and withdrawal of the rejection are respectfully requested.

#### *Issues Under 35 U.S.C. § 103*

Claims 1, 3, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ise et al., US 2004/0124769 A1 ("D1") in view of Takahashi et al., US 6,048,631 ("D2"). Applicants respectfully traverse the rejection.

In order to further distinguish the present invention from the teachings of D1 and D2, Applicants have amended claim 1 to recite that the organometal complex includes at least iridium as the metal. Applicants respectfully submit that the combination of D1 and D2 does not

give a *prima facie* case of obviousness. And even assuming *arguendo* that a *prima facie* case of obviousness were to exist, the present invention as described in claim 1, has unexpectedly superior properties over the teachings of D1 and D2. As such, the *prima facie* case would be overcome by the unexpected properties.

**First**, the combination of D1 and D2 does not give a *prima facie* case of obviousness.

The Examiner is aware that D1 does not teach or fairly suggest the use of the aluminum compound of formula (III) as a host material, as presently claimed. As such, the Examiner relies on the teachings of D2 for this feature. However, Applicants respectfully submit that modifying the organic electroluminescent device of D1 to include the aluminum compound of D2 would not be obvious.

For a *prima facie* case of obviousness, the artisan must have a reasonable expectation that modifying the teachings of the primary reference with the features of the secondary reference would give a working product/device. See MPEP 2143.02. In general, there are many guest materials and host materials which are known, but the artisan would find it difficult to pick and choose from the numerous possible combinations to find one that is successful. This difficulty is the result of the unpredictability of the art. Applicants enclose herewith a Declaration under 37 CFR 1.132 by Mr. Hiroshi Miyazaki, wherein Mr. Miyazaki discusses the unpredictability of this art. As explained in detail in the Declaration, fluorescence and phosphorescence have a different luminescence mechanism. There is no reason why the artisan would expect an emission material which is effective to give fluorescence will also be effective to give phosphorescence. That is to say, the emission material of the *fluorescent* organic electroluminescent devices (F-OLED) which D2 disclose emits luminescence itself. However, in the *phosphorescent* organic electroluminescent device (P-OLED) of the present invention, the emission material performs as a host material, and it is not the one which emits luminescence. Rather, the Ir complex in the guest material is the one which emits luminescence. Accordingly, the skilled artisan ***would not have a reasonable expectation of success*** to do that which Applicants have done.

In view of this unpredictability, Applicants respectfully submit that the present invention is not *prima facie* obvious based on the combination of D1 and D2, since there would not be a reasonable expectation that modifying the teachings of D1 to include the aluminum compound of D2 would give a successful organic electroluminescent device.

**Second**, even if a *prima facie* case of obviousness were to exist, the Declaration is evidence that the use of the luminescent layer containing a compound of general formula (III) as a host material and an organometal complex containing at least iridium as a guest material has ***unexpectedly superior properties*** as a P-OLED over the F-OLED of the cited references.

The Declaration establishes that using the combination of the Ir guest material with the aluminum complex (formula III) host material (as presently claimed) gives ***unexpectedly superior properties (luminance)*** when compared to the combination of an Ir compound and Alq3 as shown in Example 1 of D1. As such, even assuming *arguendo* that a *prima facie* case of obviousness were to exist, the present invention as described in claim 1, has unexpectedly superior properties over the teachings of D1 and D2. Therefore, the *prima facie* case would be overcome by the unexpected properties.

Reconsideration and withdrawal of the rejection are respectfully requested.

### ***Conclusion***

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

In view of the above amendment, Applicant believes the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Garth M. Dahlen, Ph.D., Esq., Reg. No. 43,575, at the telephone number of the undersigned below to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

Dated: January 4, 2010

Respectfully submitted,

By 

**GARTH M. DAHLEN**  
**USPTO #43,575**

Gerald M. Murphy, Jr.  
Registration No.: 28977  
BIRCH, STEWART, KOLASCH & BIRCH, LLP  
8110 Gatehouse Road, Suite 100 East  
P.O. Box 747  
Falls Church, VA 22040-0747  
703-205-8000

Attachments: Declaration under 37 CFR 1.132 by Mr. Hiroshi Miyazaki (and cited therein – Tsuji et al., SID 04 Digest, 2004, pages 901-903)